

What is claimed is:

1. An apparatus for producing ketoisophorone comprising: an oxidizing-reaction unit for forming ketoisophorone by oxidizing  $\beta$ -isophorone with oxygen in an inert solvent in the presence of an oxidizing catalyst; a separation unit for separating ketoisophorone, the solvent, a low-boiling point component having a boiling point of 100 to 180°C as a by-product from the reaction mixture; and a recycling line for recycling the solvent separated in the separation unit to the oxidizing-reaction unit.

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